

## Capillary action

### Colourful celery and carnations

**Aim:** Learn about capillary action and its role in transpiration

**Activity:**

- This simple activity demonstrates how plants take up water in their stems and move it up the plant to the leaves. It is usually done with celery or white flowers, such as carnations.
- Add food dye to the water in a glass jar and place the celery or carnation into the water – try different colours in each jar, plus a ‘control’ jar with just water.
- Devise experiments with different temperatures, e.g. plants in fridge or direct sun, in the light and dark, and different watering regimes.
- Record the differences between each experiment.

Discuss how capillary matting works, and how it keeps seeds and plants watered when left unattended for a while – for example over school holidays.

## Medicinal use of plants

### Use the *Pappus* Plant ID sheets to find out more

**Aim:** Find out about medicinal uses of plants in history and contemporary medicine

**Activity:**

The *Pappus* Plant ID sheets contain a wealth of information to support any topic around this subject and highlight links to history and literacy.

These plants in particular have interesting medicinal uses for pupils to discover:

- Willow sap (*Salix*): contains salicin, which is used to in the pain reliever drug aspirin.
- Common nettle (*Urtica dioica*): during WW1 nettles were used for anti-asthma treatments, and as a source of vitamins.
- Dog rose (*Rosa canina* L.): contains vitamins and other compounds used in treating symptoms of osteoarthritis, rheumatism and the common cold. More recently there is evidence of properties that could counter cancer, obesity and diabetes.
- Poppy (*Papaver rhoeas*) – well known as an ingredient in illicit drugs, poppies are also used to create strong pain killers and recent research suggests their petals could be used to treat skin cancer.

## Nettle investigation

### Why do nettles sting? And do dock leaves help?

**Aim:** Use the *Pappus* Nettle ID sheet and the internet to research nettle stings

**Activity:**

The tiny hairs on nettle leaves contain histamines and other irritants that sting. There is lots of anecdotal evidence that suggests that plants such as docks and plantains will reduce the inflammation when their leaf juices are released. The scientific community have not yet concluded whether it works yet, but they do seem to act as a useful placebo.

Visit the Science and Plants for Schools website [www.saps.org.uk](http://www.saps.org.uk) and search for ‘why do nettles sting’.

Why do nettles sting



## Hygrometer – seed dispersal methods

### Use pinecones to test humidity

**Aim:** Experiment with pinecones to see how they open up to disperse seeds when dry.

- In humid weather, pinecones close to prevent the seeds escaping – the seeds are very light and can become waterlogged, preventing them from travelling longer distances from the original source.
- In dry weather the cone opens to disperse dry seeds that travel in the air further away from the original tree.



This is a pinecone adaptation that maximises the likelihood of successful seed dispersal. The seeds travel best when the air is warm and dry, so the pinecone closes in poorer conditions.

- Check out the Science Learning Springboard: Pinecone hygrometer for full details.